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| 5778359.pn. | 3         |

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| <i>DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR</i> |              |                  |                               |
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| <u>L16</u>   | 6353831.pn.  | 2                | <u>L16</u>                    |
| <u>L15</u>   | 6078925.pn.  | 2                | <u>L15</u>                    |
| <u>L14</u>   | 6078923.pn.  | 2                | <u>L14</u>                    |
| <u>L13</u>   | 6047291.pn.  | 2                | <u>L13</u>                    |
| <u>L12</u>   | 6014677.pn.  | 2                | <u>L12</u>                    |
| <u>L11</u>   | 5992737.pn.  | 2                | <u>L11</u>                    |
| <u>L10</u>   | 5856925.pn.  | 3                | <u>L10</u>                    |
| <u>L9</u>  | 5799310.pn.  | 3                | <u>L9</u>                     |
| <u>L8</u>  | 5797008.pn.  | 3                | <u>L8</u>                     |
| <u>L7</u>  | 5528739.pn.  | 3                | <u>L7</u>                     |
| <u>L6</u>  | 5457795.pn.  | 3                | <u>L6</u>                     |
| <u>L5</u>  | 5745901.pn.  | 3                | <u>L5</u>                     |
| <u>L4</u>  | 5446896.pn.  | 3                | <u>L4</u>                     |
| <u>L3</u>  | 6160549.pn.  | 2                | <u>L3</u>                     |
| <u>L2</u>  | 5809266.pn.  | 3                | <u>L2</u>                     |
| <u>L1</u>  | 6272495.pn.  | 2                | <u>L1</u>                     |

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L9: Entry 1 of 3

File: USPT

Aug 25, 1998

US-PAT-NO: 5799310

DOCUMENT-IDENTIFIER: US 5799310 A

TITLE: Relational database extenders for handling complex data types

DATE-ISSUED: August 25, 1998

## INVENTOR-INFORMATION:

| NAME                      | CITY          | STATE | ZIP CODE | COUNTRY |
|---------------------------|---------------|-------|----------|---------|
| Anderson; Matthew Paul    | Morgan Hill   | CA    |          |         |
| Donn; Siyi Terry          | Saratoga      | CA    |          |         |
| Fallside; David Couttie   | San Jose      | CA    |          |         |
| Ha; Tri Q.                | San Jose      | CA    |          |         |
| Hembry; Douglas Michael   | Los Gatos     | CA    |          |         |
| Ho; Jean C.               | Saratoga      | CA    |          |         |
| Jang; Jing-Song           | Cupertino     | CA    |          |         |
| Mattos; Nelson            | San Jose      | CA    |          |         |
| Niblack; Carlton Wayne    | San Jose      | CA    |          |         |
| Petkovic; Dragutin        | Saratoga      | CA    |          |         |
| Tung; Frank Chin          | Saratoga      | CA    |          |         |
| Uhrowczik; Peter Paval    | Los Gatos     | CA    |          |         |
| Vo; Mimi Phuong-Thao Thi  | San Jose      | CA    |          |         |
| Wilmot; Gerald Johann     | Marina        | CA    |          |         |
| Yanker; Peter C.          | Mountain View | CA    |          |         |
| Cheng; Josephine Min-Kung | San Jose      | CA    |          |         |

## ASSIGNEE-INFORMATION:

| NAME  | CITY   | STATE | ZIP CODE | COUNTRY | TYPE | CODE |
|---|--------|-------|----------|---------|------|------|
| International Business Machines Corporation | Armonk | NY    |          |         | 02   |      |

APPL-NO: 8 / 548301 [PALM]  
DATE FILED: November 1, 1995INT-CL: [6] G06 F 17/30

US-CL-ISSUED: 707/102, 707/103, 707/2

US-CL-CURRENT: 707/102; 707/2FIELD-OF-SEARCH: 395/200.01, 395/335, 395/602, 395/603, 395/421.07, 396/617,  
396/609, 396/614, 396/326, 707/2, 707/102, 707/103

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

| PAT-NO                                  | ISSUE-DAT      | PATENTEE-NAME        | US-CL      |
|---|----------------|----------------------|------------|
| <input type="checkbox"/> <u>4819152</u> | April 1989     | Deerfield et al.     | 395/421.07 |
| <input type="checkbox"/> <u>4959776</u> | September 1990 | Deerfield et al.     | 395/421.07 |
| <input type="checkbox"/> <u>5303367</u> | April 1994     | Leenstra, Sr. et al. | 707/102    |
| <input type="checkbox"/> <u>5313630</u> | May 1994       | Namioka et al.       | 395/614    |
| <input type="checkbox"/> <u>5335346</u> | August 1994    | Fabbio               | 395/609    |
| <input type="checkbox"/> <u>5446575</u> | August 1995    | Lysakowski, Jr.      | 395/200.01 |
| <input type="checkbox"/> <u>5499371</u> | March 1996     | Henninger et al.     | 707/102    |
| <input type="checkbox"/> <u>5546576</u> | August 1996    | Cochrane et al.      | 395/669    |
| <input type="checkbox"/> <u>5553234</u> | September 1996 | Cotner et al.        | 395/182.14 |
| <input type="checkbox"/> <u>5579471</u> | November 1996  | Barber et al.        | 395/326    |
| <input type="checkbox"/> <u>5604899</u> | February 1997  | Doktor               | 395/603    |
| <input type="checkbox"/> <u>5611076</u> | March 1997     | Durflinger et al.    | 707/102    |
| <input type="checkbox"/> <u>5615362</u> | March 1997     | Jensen et al.        | 707/103    |
| <input type="checkbox"/> <u>5617567</u> | April 1997     | Doktor               | 395/602    |
| <input type="checkbox"/> <u>5627979</u> | May 1997       | Chang et al.         | 395/335    |
| <input type="checkbox"/> <u>5652882</u> | July 1997      | Doktor               | 395/617    |

## OTHER PUBLICATIONS

DeFazio et al. "Database Extensions for Complex Domains", Data Engineering, 1996 12th Int'l Conf., pp. 200-202.  
 Cheng et al. "An Efficient hybrid Algorithm: A DB2 Prototype", Data Engineering, 1991 7th In't. Conf., pp. 171-180.  
 Gardarin et al. "Extending A Relational DBMS to Support Objects", IEEE, pp. 131-137, 1989.  
 Farris, A. "Modeling Complex Astrophysics Data", Scientific and Statistical Database, 1994 7th Int'l Working Conference, pp. 149-158, Feb. 1994.  
 Schlatter et al. "The Business Object Management System", IBM Systems Journal, v.33, n2, pp. 239-263, 1994.  
 Dai, Haihong "An Extended Object-Oriented Data Model for Complex Inter-Entity Relationships", TENCON '94 1994 IEEE Region 10 Conf. on Frontiers, pp. 402-406.  
 Chang et al. "A Universal Relation Data Model with Semantic Abstractions", IEEE Transactions on Knowledge and Data Engineering, v.4, n.1, pp. 23-33, Feb. 1992.  
 "Informix to Acquire Illustra", Illustra, Illustra Information Technologies, Dec. 20, 1995.  
 "Illustra Information Technologies: Technical Overview: Illustra: The DBMS for all of your data", Illustra, Illustra Information Technologies no date.  
 Okon, Chris, "Image Recognition Meets Content Management for Authoring, Editing & More", Advanced Imaging, pp. 60-62, Jul., 1995.

ART-UNIT: 271

PRIMARY-EXAMINER: Black; Thomas G.

ASSISTANT-EXAMINER: Rones; Charles L.

ATTY-AGENT-FIRM: Sterne, Kessler, Goldstein &amp; Fox P.L.L.C.

## ABSTRACT:

This invention is directed to relational extenders for a computer-based relational database. Each relational extender includes at least one column, in a first, business, table containing a user defined application database, dedicated to object handles for defining the complex data type of an object; a second, attribute, table containing at least one column defining a unique characteristic associated with the one object and one column dedicated to containing the object handle; and a third, metadata, table containing at least one column defining a common characteristic associated with all objects defined within the business table and one column dedicated to containing the object handle and at least one column dedicated to

containing a reference to object data associated with the object. The relational extender further includes a fourth table containing a reference to each object handle column defined in the first table, and a fifth table containing the names of the second and third tables for each object defined in the first table.

3 Claims, 10 Drawing figures

**WEST**
  

L12: Entry 1 of 2

File: USPT

Jan 11, 2000

US-PAT-NO: 6014677

DOCUMENT-IDENTIFIER: US 6014677 A

TITLE: Document management device and method for managing documents by utilizing additive information

DATE-ISSUED: January 11, 2000

## INVENTOR-INFORMATION:

| NAME              | CITY        | STATE | ZIP CODE | COUNTRY |
|-------------------|-------------|-------|----------|---------|
| Hayashi; Koichi   | Nakai-machi |       |          | JPX     |
| Sekijima; Akifumi | Nakai-machi |       |          | JPX     |

## ASSIGNEE-INFORMATION:

| NAME                 | CITY  | STATE | ZIP CODE | COUNTRY | TYPE CODE |
|----------------------|-------|-------|----------|---------|-----------|
| Fuji Xerox Co., Ltd. | Tokyo |       |          | JPX     | 03        |

APPL-NO: 8/ 660860 [PALM]

DATE FILED: June 10, 1996

## FOREIGN-APPL-PRIORITY-DATA:

| COUNTRY | APPL-NO  | APPL-DATE     |
|---------|----------|---------------|
| JP      | 7-144751 | June 12, 1995 |
| JP      | 8-133684 | May 28, 1996  |

INT-CL: [6] G06 E 17/00

US-CL-ISSUED: 707/501, 707/3, 707/200

US-CL-CURRENT: 707/104.1; 707/200, 707/3, 707/501.1

FIELD-OF-SEARCH: 707/1-206, 707/501-513

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

 

| PAT-NO                                  | ISSUE-DATE     | PATENTEE-NAME   | US-CL   |
|---|----------------|-----------------|---------|
| <input type="checkbox"/> <u>5267175</u> | November 1993  | Hooper          | 364/489 |
| <input type="checkbox"/> <u>5280574</u> | January 1994   | Mizuta et al.   | 395/146 |
| <input type="checkbox"/> <u>5452468</u> | September 1995 | Peterson        | 395/800 |
| <input type="checkbox"/> <u>5511188</u> | April 1996     | Pascucci et al. | 395/600 |
| <input type="checkbox"/> <u>5594837</u> | January 1997   | Noyes           | 395/63  |
| <input type="checkbox"/> <u>5603025</u> | February 1997  | Tabb et al.     | 395/602 |
| <input type="checkbox"/> <u>5613148</u> | March 1997     | Bezviner et al. | 395/800 |
| <input type="checkbox"/> <u>5615360</u> | March 1997     | Bezek et al.    | 395/606 |

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO  
0 326 162

PUBN-DATE  
August 1989

COUNTRY  
EPX

US-CL

## OTHER PUBLICATIONS

Marc Andressen, National Center for Supercomputing Applications, "NCSA Mosaic Technical Summary 2.1" (1993), pp. 1-5.  
National Center for Supercomputing Applications, NCSA Mosaic for the X Window System User's Guide, "How to Use Annotations," 2 pages.

ART-UNIT: 271

PRIMARY-EXAMINER: Amsbury; Wayne  
ASSISTANT-EXAMINER: Jung; David Yink  
ATTY-AGENT-FIRM: Oliff & Berridge, PLC

## ABSTRACT:

A document management device includes a database for storing and managing document data, a document retrieving device for retrieving the document data from the database, a document display for displaying at least one document data retrieved by the document retrieving device, and a format storage device for storing at least one evaluation format each of which has an identifier and a plurality of definitions of evaluation attributes. The evaluation format specifies the structure of evaluation data representing evaluation for the document data. A document selecting device allows for selection of one document data among the document data displayed, and a format selecting device allows for selection of one of the evaluation formats. An attribute value input device allows for inputting attribute values which are the result of evaluation for the document data selected by the document selecting device from the viewpoint represented by the evaluation attributes defined in the evaluation format. An evaluation data storage device is provided for storing the evaluation data which is a combination of the identifier of the evaluation format and attribute values inputted by the attribute value input device for the evaluation attributes defined by the evaluation format. A binding information creating device creates binding information which binds the document data selected by the document selecting device with the evaluation data stored in the evaluation data storage device. A binding information storage device stores the binding information.

18 Claims, 53 Drawing figures

**WEST**
  

L19: Entry 1 of 3

File: USPT

Jul 7, 1998

US-PAT-NO: 5778359

DOCUMENT-IDENTIFIER: US 5778359 A

TITLE: System and method for determining and verifying a file record format based upon file characteristics

DATE-ISSUED: July 7, 1998

## INVENTOR-INFORMATION:

| NAME             | CITY     | STATE | ZIP CODE | COUNTRY |
|------------------|----------|-------|----------|---------|
| Stent, Robert J. | Westford | MA    |          |         |

## ASSIGNEE-INFORMATION:

| NAME              | CITY     | STATE | ZIP CODE | COUNTRY | TYPE CODE |
|-------------------|----------|-------|----------|---------|-----------|
| Davox Corporation | Westford | MA    |          |         | 02        |

APPL-NO: 8/ 634471 [PALM]

DATE FILED: April 18, 1996

INT-CL: [6] G06 F 9/30

US-CL-ISSUED: 707/4; 707/104, 707/200, 707/384, 707/523

US-CL-CURRENT: 707/4; 707/104.1, 707/200, 707/523, 712/208, 712/300

FIELD-OF-SEARCH: 395/615, 395/616, 395/604, 395/707, 395/785, 395/200.19, 707/4, 707/104, 707/200, 707/523, 707/384

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

 

| PAT-NO                                  | ISSUE-DATE    | PATENTEE-NAME      | US-CL      |
|---|---------------|--------------------|------------|
| <input type="checkbox"/> <u>4789852</u> | December 1988 | Bailey et al.      | 341/50     |
| <input type="checkbox"/> <u>5301304</u> | April 1994    | Menon              | 395/500    |
| <input type="checkbox"/> <u>5410677</u> | April 1995    | Roskowski et al.   | 395/500    |
| <input type="checkbox"/> <u>5414834</u> | May 1995      | Alexander et al.   | 395/600    |
| <input type="checkbox"/> <u>5446896</u> | August 1995   | Hegarty et al.     | 395/650    |
| <input type="checkbox"/> <u>5530794</u> | June 1996     | Luebbert           | 395/148    |
| <input type="checkbox"/> <u>5590311</u> | December 1996 | Matsushima         | 395/500    |
| <input type="checkbox"/> <u>5608874</u> | March 1997    | Ogawa et al.       | 395/200.15 |
| <input type="checkbox"/> <u>5617432</u> | April 1997    | Eggenberger et al. | 371/37.1   |

ART-UNIT: 271

PRIMARY-EXAMINER: Black, Thomas G.

ASSISTANT-EXAMINER: Homere, Jean R.

ATTY-AGENT-FIRM: Bourque, Daniel J. Carroll; Kevin J.

## ABSTRACT:

A system and method for automatically determining the file record format and characteristics for a data file of unknown file record format. At least a portion of an unknown file is obtained from a file source, such as a mainframe computer. At least a portion of the file is examined to determine whether the file is EBCDIC or ASCII encoded. File type, including print, card, text or binary, is determined. File headers and trailers are detected and removed. Line delimiters such as carriage return, linefeed or new line characters are detected. Periodic character patterns are searched for, such as a space followed by one or more numeric digits, to determine file record length and contents. Once the file record format is determined, a user may verify and modify the data. This system and method can be used by a data processing system, including a telephony system which accesses data records to determine parties in a database to contact, and automatically dial those parties.

27 Claims, 8 Drawing figures